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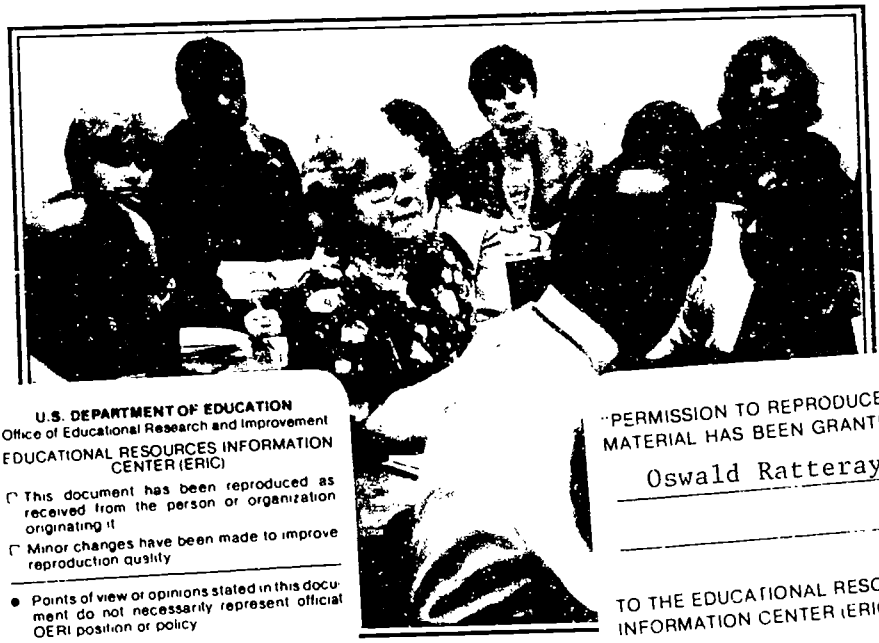
ABSTRACT

This report provides a summary of two symposia on information literacy sponsored by the Commission on Higher Education, Middle States Association of Colleges and Schools (CHE), the National Forum on Information Literacy, and the Association of College and Research Libraries. These events brought together institutions of the Middle States region who have made progress toward institutionalizing information literacy so that they could share their expertise and enhance their varied approaches to information literacy initiatives. The need is noted for campus-wide commitment to information literacy as an educational strategy that will improve learning experiences. Several approaches that can help establish commitment and then translate it into reality are discussed: demonstrating the importance of information literacy; ensuring a shared vision among administrators; facilitating professional development; restructuring curricula to emphasize information literacy; adapting to student needs; and collaborating with K-12 and graduate programs. A list of symposia participants is provided. (AEF)

INFORMATION LITERACY

LIFELONG LEARNING IN THE MIDDLE STATES REGION



A Summary of Two Symposia

Commission on Higher Education
Middle States Association of Colleges and Schools

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Cover: Participants in the Information Literacy Symposium held in Rochester, New York, share their campus experiences.
Photo by Ray Treat, Monroe Community College.

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Association of College and Research Libraries (ACRL) — for planning, conducting surveys of institutions in the region, and serving as resources at the symposia: Dr. Althea Jenkins, Executive Director; and Dr. Noreen Hale, Associate Executive Director for Special Programs and Advancements;

Philadelphia College of Pharmacy and Science — for providing the meeting facilities and services in Philadelphia: Dr. Philip P. Gerbino, President; and Ms. Mignon S. Adams, Director, Library Services;

Monroe Community College — for providing the meeting facilities and services in Rochester, New York: Dr. Peter A. Spina, President; Dr. Jeffrey Bartkovich, Assistant Vice President for Curriculum and Academic Services; and Ms. Jean Cray, Director of Campus Events;

Member institutions in the Middle States region — for sending the individuals listed in the back of this report to participate in the symposia discussions.

Preface

The Commission on Higher Education, Middle States Association of Colleges and Schools (CHE), developed the following standard on information literacy, which was published in *Characteristics of Excellence in Higher Education: Standards for Accreditation* (1994), the Commission's primary statement of standards:

> Each institution should foster optimal use of its learning resources through strategies designed to help students develop information literacy—the ability to locate, evaluate, and use information in order to become independent learners. It should encourage the use of a wide range of non-classroom resources for teaching and learning. It is essential to have an active and continuing program of library orientation and instruction in accessing information, developed collaboratively and supported actively by faculty, librarians, academic deans, and other information providers [p. 15].

Prior to 1994, *Characteristics* addressed the need for access to learning resources through "[a]n active and continuous program of bibliographic instruction." In addition, these resources were conceived in the context of the physical structure that has been referred to traditionally as a library or learning resource center.

The 1994 edition of *Characteristics* began to update this concept, now outmoded in the age of rapidly-advancing computer technology, calling upon institutions to provide "access to a broad range of learning resources," by stating:

> Although access to these resources is customarily gained through a library/resource center, an attempt should be made to think beyond the physical confines of the traditional library in regard to information access....Students, faculty, and staff should have access to remote as well as on-site information resources" [p. 15].

It is in this setting that CHE became the first accrediting agency to join the National Forum on Information Literacy, promoting an even broader definition of information literacy—one that reaches

far beyond the narrow concept of bibliographic instruction and touches both content and pedagogy. The Forum, established in 1990, defined information literacy as:

> a subset of critical thinking skills which consists of individuals' abilities to know when they have an informational need and to access, evaluate, and effectively use information.

This definition assumes that information literacy is not the unique and sole province of librarians or other information providers but is an integral part of the objectives for every course on campus, and it requires administrative support for effective implementation. Therefore, it will be incumbent upon future editions of *Characteristics* to discuss information literacy in the context of the educational program and curricula as well.

Given this expanding vision for information literacy, CHE cooperated with the National Forum on Information Literacy and the Association of College and Research Libraries in sponsoring two regional symposia in 1995, one in Philadelphia, Pennsylvania, on March 27 and one in Rochester, New York, on May 1. These events brought together some of the institutions in the region who were known to have made progress toward institutionalizing information literacy so that they could share their expertise with each other and enhance their varied approaches to information literacy initiatives.

The following report summarizes their discussions. It is presented as a guide to institutions in the Middle States region that are beginning to focus on the information literacy standard in *Characteristics* as well as to institutions that are reevaluating their existing initiatives to identify which enhancements might be most useful in the context of their unique mission, goals, and objectives.

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Information Literacy

Lifelong Learning in the Middle States Region

A Summary of Two Symposia

[The perspectives expressed in this report are restatements of the views of participants in two symposia and do not necessarily reflect the views of any member of the Commission on Higher Education.]

Information literacy is a set of age-old skills that transcend specific disciplines and careers. Embedded in the concepts of lifelong learning and entry to and mobility within professions, it deals with issues of access to information and strategies for evaluating and effectively using that information. As more and more people find it necessary to change careers, it becomes increasingly important for them to have skills which will empower them to continue learning effectively.

The threshold issue for colleges and universities in the Middle States region is the need for a campus-wide commitment to information literacy as a strategy that will improve the immediate learning experiences of each student in every discipline and one that will enhance the student's lifelong learning. Such a commitment must become evident in a collaborative effort by the administrative staff, faculty, and information providers.

In addition to commitment, there must be flexibility, because both within and between institutions, there are tremendous variations among students, faculty, and administrators in abilities, basic skills, and awareness of what is information literacy. There are also variations in available resources. Nevertheless, an effort must be made to identify a range of options which institutions and individuals can utilize as a starting point.

There are several approaches that can help to establish the necessary campus-wide commitment and then translate that commitment into a reality. The first is to demonstrate to all the importance of information literacy. The next steps probably should occur simultaneously at the administrative, faculty development, curricular, and student levels. For example, administrators must anticipate and take steps to remove institutional barriers to such a program. Information literacy programs should be incorporated in professional development programs. Collaborative efforts to review and restructure curricula and pedagogy should be encouraged. And meeting student needs for information literacy should be a critical objective of all programs and services. Finally, institutions of higher education should involve themselves more fully in the educational continuum by developing cooperative ventures with other institutions and programs at the K-12, undergraduate, and graduate levels.

Demonstrating Importance

Academic officers, faculty, information providers, and students need to share a common understanding of the importance of information literacy. Each must "buy into" the concept of incorporating it in every course on campus, and their acceptance is central to the success of any information literacy program.

The first step is to identify one or more individuals who can serve as the "spark" for the idea. In some instances, the driving force may be a faculty member who already has reached beyond the content requirements of his or her discipline and engaged in a collaborative discussion with others on how information literacy can be an effective strategy for achieving course objectives. Or it may be one who is at least willing to become involved in the process Or there may be pressure from an outside source, such as an accrediting agency, to implement programs that recognize the importance of information literacy.

The second step is to persuade the faculty and administrative staff of the importance of information literacy. This can be accomplished by addressing four immediate and long-range concerns: improving students' products, linking and refining the components of information literacy, focusing on the main purposes of an educational institution, and recognizing the need for shared responsibility in teaching and learning.

First, faculty often are unhappy with the products they receive from students in response to writing assignments. Therefore, it should be possible to convince the faculty that having improved products from students is worth the investment of time required to develop more effective programs.

Second, several of the components of information literacy are clearly within the scope of current faculty concerns. They already devote time and effort to instructing students in how to evaluate and utilize curriculum content information. It is a matter of linking *evaluation and utilization* with *access, collection, and selection* and, if necessary, *refining existing instruction* so that it is part of a coherent whole in a continually recursive process. Linkage and refinement become two threshold issues in demonstrating the importance of the concept, although the details of how this can be accomplished should be articulated in a faculty development program.

Third, it is important for everyone involved to bear in mind the main purpose of an educational enterprise. In addition to pragmatic concerns about the immediate problem of student productivity, we are, after all, talking about the lifelong learning and future success of graduates, which are the primary reasons why an institution of higher education even exists.

Fourth is the notion of shared responsibility for teaching and learning. Unfortunately, there is a tendency on many campuses for faculty and students with information needs to bring their problems to the information providers, who often find that they have more students and faculty to serve than they can accommodate. Therefore, it is doubly important for faculty to share some of the responsibility for issues of access, collection, and selection. Likewise, information providers must be sensitive

to and knowledgeable about issues of evaluation and utilization in order to provide students with the proper guidance on discipline-specific projects. In addition, more students should assume greater responsibility for their own learning.

Students also need to understand the importance of information literacy, relating it to decisions that must be made every day and everywhere in their environment. For example, they not only need those skills to manage better the content of the various disciplines that they are studying, but they also can use them in the cafeteria and when they register for courses. Some colleges encourage the use of the Internet as a way to pique the interest of students in exploring information resources.

An Administrative Perspective

The key members of the administrative staff on campus who can spearhead the institutionalization of information literacy usually are the chief academic officers. The role of the academic officer is to anticipate institutional barriers and take steps to create an environment in which the program can flourish.

The starting point for generating a widespread institutional commitment to information literacy is to ensure that an institutional vision for information literacy is widely shared among administrators. Then it is possible to discuss barriers to institutionalizing the concept. The most common of these barriers are program isolation and the frequently difficult problem of locating sufficient resources.

The departmentalization of colleges and universities tends to inhibit a cross-disciplinary approach to information literacy. However, program isolation can be avoided by coordinating collaboration across campus. This approach avoids either unnecessary duplication of effort, the use of inappropriate technology that impedes technical compatibility with other sectors of the campus, and any pervasive historical or contemporary reluctance to communicate with others about related efforts.

Some campuses report an increase in joint efforts and other forms of collaboration between academic computing departments and libraries to address issues of information access and utilization. Such coordination encourages people to plan together, and institutions have found that discussing planning in the context of curriculum priorities helps to minimize counterproductive campus politics.

The task of locating sufficient resources logically follows an institution's commitment to establish information literacy as an educational goal. It involves effective strategic planning to obtain new funds or to reallocate existing resources for expanding the professional development of faculty and administrative staff as well as to provide adequate space, equipment, and supplies. For example, institutions should be prepared to make a commitment to enhancing their infrastructure with computers and other media. There is also an issue of anticipating and coping with the rapid obsolescence of technology.

While the use of computers and related technology is only one of the many skills involved in information literacy, infusing technology into all levels of the campus can stimulate greater involvement in the process. One college first enabled students to have computer access, and that motivated the faculty.

While planning necessarily involves taking some risks, all strategies need not be on the infusion model. For example, institutions can develop pilot projects with successful models and communicate the results. College and university presidents also tend to have discretionary funds, which can be utilized to support credible projects. Moreover, pilot projects are less threatening to faculty and others for the introduction of "new" ideas. There also are many external sources that could be approached to provide funds to develop pilots and disseminate the results.

The inefficient use of space in libraries and learning centers can be a problem if the space is occupied by students engaged in individual study. On the other hand, space can be prioritized for group projects, while students can conduct some of their individual research at home, especially with the proliferation of personal computers, modems, Internet access from campus, and

other technology that is becoming increasingly available. Nor is it necessary for each institution to buy all the materials that would be useful in such a program. There are multiple resources already on the Internet for textbook review and software review as well as reports on experiences with incorporating multimedia in the curriculum and with information literacy. Most of these are on USENET and LISTSERV lists. By not "reinventing the wheel," campuses can achieve more than they can individually.

Facilitating Professional Development

Professional development programs in information literacy enable faculty to have the ability and confidence to develop the necessary skills in their students. They enable administrators to gain a clearer idea of how to anticipate and overcome institutional barriers. They also encourage information providers, whose focus often is limited to bibliographic instruction, to broaden their horizons. On the other hand, those who deliver support services, such as academic computing staff, also should not be ignored in the design of an information literacy component to existing professional development programs.

Some of the issues that arise in creating an effective professional development program on information literacy include identifying and accommodating the participants, understanding the role of technology on evolving curricula, managing a pedagogical shift, and enhancing the status of information providers on campus.

The Participants

The initial question to be answered is: Does the institution as a whole have a sufficient number of faculty and information providers who are prepared (i.e., advanced in the topic of information literacy) and potentially available (i.e., time and workload) to lead and sustain a campus-wide effort? The need for professional development also raises issues about how they will be informed, who is most competent to deliver the necessary instruction, and how to stimulate faculty interest in information literacy.

The answers to these questions should lead the institution to enhance its faculty development program by providing the necessary vision, funding, and rewards for participation to ensure that changes in curriculum and pedagogy are introduced on campus. For example, one step that can be taken is to award a small number of sabbaticals on a competitive basis for professional development in information technology or other topics. Many colleges and universities also offer workshops for faculty, either in a room away from public scrutiny, in a regular classroom, or in one-to-one situations in faculty offices.

It is especially important that full-time faculty support the concept, because they are more readily available for professional development opportunities than part-time faculty, who tend to have a higher turnover rate. On the other hand, one institution scheduled workshops at times that were convenient for adjunct faculty.

The Role of Technology

Unfortunately, many people confuse information literacy with technological literacy, failing to distinguish between computer-assisted instruction, computer literacy, and the much broader field of information literacy. Everyone must begin to realize that while technology will continue to change rapidly, strategies for information literacy, including critical thinking skills, are much more stable.

Nevertheless, technology remains a critical force driving changes in instructional programs. While some contend that its impact is not always positive, technology does force improvements in instruction by making gaps more visible. For example, some faculty members must be trained in the unique aspects of computer-based pedagogy, showing them that the computer is more than an electronic typewriter for word processing. In addition, both faculty and information providers must become involved in teaching the skills that are related to the various types of software that are available.

Faculty and administrators need to become more familiar with the information resources to which they can have access from their own desktop computers. They often indicate that they do not have the time to engage in certain types of research, but it can be pointed out that their resources will increase dramatically without trips to the learning center if the technology they need is on their own desktops.

A Pedagogical Shift

Faculty development issues also involve learning how information literacy skills can be emphasized in classroom settings. It may even require a change in pedagogy, as faculty become more familiar with new methods for delivering instruction. For example, resource based learning requires faculty to shift from being disseminators of substantial amounts of content information to being facilitators for students who are independent learners.

Other pedagogical shifts may include changing from having students rely primarily on information acquisition to a greater emphasis on the selection and use of information. It may include having fewer lectures "about" information literacy, replacing them instead with applied strategies for information literacy, such as the case history approach to describing examples.

Unfortunately, whenever the need for a paradigm shift enters the discussion, the bias that some in the campus community have toward familiar content and teaching methods—including faculty, administrators, and students—can produce strong resistance to change. In particular, those who make decisions about tenure and other forms of career advancement may not even value the need to teach information literacy skills as a factor in their decision making. Indeed, some faculty and staff have been reluctant to do more than is required for their personal advancement. To offset this reluctance, an institution could ensure that its criteria for hiring include a requirement to demonstrate an interest in, or at least a sensitivity to, the concept of information literacy.

In addition to having a formal mandate, there must be quiet encouragement and peer example on the part of those who

already accept the concept. Many information providers have had the greatest success when they are able to sit with individual faculty members and examine subject-specific assignments. These informal professional contacts introduce faculty to the concept of information literacy, provide them with examples of how selected courses have introduced information literacy skills in specific assignments, and encourage them to share their successful experiences with each other. Because of the cross-disciplinary nature of information literacy instruction, collaboration is in the best interest of each faculty member, and arranging partners for faculty is effective in many instances. Through these types of experiences, information providers have been able to capture the attention, interest, and involvement of faculty and others.

The Status of Information Providers

The status and role of librarians and other information providers on a campus also is very important to the success of their work with faculty. There is a need to clarify perceptions about the traditional jurisdictions of information providers and faculty so that faculty see information providers as peers and both share some of the responsibility for promoting information literacy. Jurisdictional problems, especially in the area of training, can lead to either the duplication of effort or the neglect of important training elements. Therefore, communication, cooperation, and agreements must be developed between campus components that are providing access and instruction so that each unit is aware of the goals and activities of other units in a campus-wide information literacy effort.

While librarians need to look at information research as lifelong learning, they also need to convince some faculty of that fact. Faculty often must be trained to deal effectively in an information environment that is different from the one to which they have become accustomed, they need to be kept aware of the resources that are available for their use, and they need institutional support to make the necessary changes. Furthermore, establishing an information literacy initiative creates an opportunity for information providers to present themselves as resources who can assist faculty.

There are many examples of successful collaboration on information literacy initiatives, and those experiences provide the basis for greater involvement by faculty, administrators, and information providers on other campuses. Moreover, each faculty and staff member should accept the responsibility to teach and inspire others by example. For the institutionalization of information literacy to become a reality, everyone must accept and commit to the concept, define attainable tasks, be alert to windows of opportunity, and be prepared to implement the approach quickly or as soon as is reasonable.

Restructuring Curricula

There is a common misperception that information literacy skills are best addressed in a stand-alone course. However, stand-alone courses may be too labor-intensive to be workable. Information literacy also is one of the many concepts that either transcend disciplines or have clear parallels among disciplines, enabling students to transfer basic skills from one specific disciplinary concept to another. Therefore, many institutions have found that information literacy is best integrated widely into curricula and its relevance reinforced at every point in the learning experience. Such an effort begins with clear statements of goals and outcomes as well as a resolve to overcome objections about insufficient time and space.

Goals and Outcomes

Introducing information literacy skills as part of the core curriculum and across all disciplines must begin with an explicit statement on information literacy in the institution's philosophy, mission, and goals. Course requirements also tend not to mention the acquisition and use of information as a requirement, nor is it mentioned in promotional literature for student recruitment. As a starting point, institutions might consider identifying specific courses in which to initiate a campus-wide information literacy effort.

Having developed a statement of goals and identified courses for priority attention, the institution should establish a set of specific learning outcomes, identifying a continuum of increasingly complex skills that students will be expected to acquire, and reaching a consensus on how these outcomes will be measured in the syllabus.

One approach to identifying outcomes is to ask faculty and staff what they would like a program of information literacy to do for their particular functions and the normal outcomes of their work. These criteria then can be incorporated in a system of accountability. In this regard, it is important to stress that information literacy requires a multi-disciplinary effort to frame the learning objectives for and to teach information literacy.

The desired outcomes may be divided into two types: those associated with gathering the information and those related to using the information.

Outcomes for gathering information include the following:

Asking the right questions

Checking the quality of your sources

Learning how to find authoritative sources

Evaluating the information as you gather it

Gaining facility with using the technology

Outcomes for using information include the following:

Filtering large amounts of information

Learning to select and synthesize

Thinking critically about the content of the information

Learning to present information

Being aware of ethical issues

Faculty should be reminded that information literacy involves concepts that they have been attempting to teach all along, but now they have additional resources and colleagues at their disposal. Among the specific skills that faculty require of students

are the ability to define the research problem, to identify the kinds of resources that are available, to utilize critical thinking skills in determining which information to select and in evaluating its quality, and to summarize and articulate their findings in writing or orally.

Pressures of Time and Space

A standard objection to incorporating information literacy requirements into course curricula is that there is insufficient time, because curricula tend to be filled with teaching and learning competencies in technical areas. Students cannot absorb any more, and faculty cannot find the time to absorb any more content or move up the learning curve on new technologies. Moreover, giving writing assignments that require students to demonstrate information literacy increases the time required to grade papers, which also displaces preparation for teaching course content.

Faculty and student complaints about the time required to deal with information literacy can be mitigated by analyzing how time currently is being spent or misspent on information literacy strategies, such as in completing existing term paper assignments. Better time management also may be part of the solution, as faculty establish timelines by which students should complete the various steps in a research assignment.

Information providers also can assist faculty with classroom and lab activities related to that course. In some instances, library staff visit the classroom; others bring classes to the library and/or encourage students to use information resources in the community. Librarians increasingly are working with faculty to prepare instructional sessions, rather than bringing ready-made presentations to every session. The best approach depends on the nature of the research and the size of the class. Generally speaking, larger groups tend to disturb others.

There are numerous examples of institutions that have revised their curricula and pedagogy to incorporate an emphasis on information literacy. For example, the University of Medicine/Dentistry of New Jersey began to stress information literacy in order to ensure that its graduating physicians would be

self-directed problem solvers in the community. Brookdale Community College included information literacy in its philosophy of education. The New York City Technical College, as part of the CUNY system, is charged with creating an institution-wide mission statement that addresses information literacy. King's College, in reforming its general education requirements, included information literacy as a critical outcome in what it means to be an educated person.

Adapting to Student Needs

Students must "buy into" the importance of information literacy in their own lives, and they are more likely to do so if they perceive its relevance to their future success and understand what they must do to become prepared as lifelong learners.

Student research tends to be oriented toward products (e.g. computers, libraries, and term papers). Instead, their research should be reoriented toward an increased emphasis on the research process, including the use of critical thinking skills on the path to learning. Students also need to become more aware of the entire range of materials available for research, because not all information is in print, in libraries, or on computers. For example, students at a culinary institute sometimes must evaluate information from actual food items.

There also is a problem of variations in the level of student preparation for information literacy, and institutions must make appropriate adjustments for these variations. For example, establishing a pre-information literacy component can address students with special needs, such as those who are largely unfamiliar with information resources and technology, those who experience technology anxiety, and those who may be physically challenged in their access to and/or ability to manipulate the resources and technology. When students are familiar with the processes involved, they save time and effort in their major assignments.

A related problem is that the infusion of technology into society is creating a greater gap between the "haves" and the "have-nots" in a classroom. There are students who arrive on campus with their own computers and modems, having had access to and instruction in their use in high school, while other students have been unable to have computer access of any kind. It is necessary to make students aware of this gap at the outset of class so that those on both ends of the continuum believe that their needs will be understood and addressed.

Furthermore, there is statistical evidence that information literacy contributes to a student's retention of information, and this type of evidence would be particularly useful in proposals for funding.

One institution reported that it sponsors breakfasts with corporate chief executive officers, who discuss the importance they place on effective information retrieval and use. Another institution suggested providing alumni who could talk about how their information literacy training helped them in their professional fields or other careers.

Faculty also should understand that it is not sufficient for someone to talk to the students about searching for information or explain the process during an "open house"; students will retain the information only if they have an actual project to execute.

Sometimes it is strategically important to train some students first, because they, in turn, will pressure the faculty and staff to stay abreast of the new horizons in teaching and learning.

The impact of distance education on both students and faculty also cannot be ignored. It provides an opportunity for faculty to expand the reach of their courses, but it also poses another challenge: students are likely to need to obtain all or some of the information they seek from distance learning sources and, therefore, require information literacy skills at a distance as well. Moreover, institutions must ensure, in their concern for quality, that such training and equitable access to information is available to off-campus students.

Assessment is yet another matter of some concern. Institutions should examine the array of assessment strategies currently utilized and determine if any of the existing data being collected could be utilized to develop profiles of information literacy among incoming students. Having appropriately defined entry-level profiles, what strategies can faculty and information providers utilize to take individual students to their next level? There is some concern among institutions with open-door policies, such as community colleges, about whether the available assessment instruments are adequate for this purpose.

Collaborating with K–12 and Graduate Programs

In the classroom, from elementary schools to graduate schools, there is a gap between the content of information and its use. There should be greater collaboration with educators across the continuum, to integrate information content and its usage. Educators at all levels need to motivate students to ask more questions and learn to frame inquiries that lead to meaningful answers.

There are many opportunities for establishing partnerships with others, within and outside the academic community as well as the region. Working with the K–12 sector is particularly important for several reasons. First, it is an institution's civic obligation to its immediate community. Second, it serves the best interest of the college or university to improve and make more uniform the information literacy skills of incoming students by collaborating with feeder institutions at the precollegiate level.

Partnerships at the undergraduate and graduate levels, in addition to focusing on content and usage, might include participating in consortia of institutions that have resources for training and access to hardware.

Conclusion

The discussions among all of the symposium participants are best summarized by the views of the academic officers, who suggested the following: 1) that institutions should concentrate on developing effective processes to achieve information literacy and share with other institutions the results, both good and bad, of those efforts; and 2) that information literacy does not cease when the degree is achieved, but it must be viewed as a lifelong learning commitment. Indeed, as one officer suggested, unless information literacy is stressed in educational programs, perhaps the diploma awarded a student should contain an expiration date.

There are many examples of institutions that have made a commitment to recognize the importance of information literacy and revised their curricula to achieve that goal. We should all establish realistic expectations for what can be accomplished in various contexts and then celebrate and build upon our successes.

NOTE: This report is part of a series being developed on information literacy in the Middle States region. Others include: 1) Strategies for curriculum enrichment, demonstrating increased interaction between faculty and information providers; and 2) Integrity in the use of information transmitted electronically by administrators, faculty, and students in higher education.

Symposia Participants

The following participants attended one of two symposia in the Middle States region: Philadelphia, Pennsylvania (March 27, 1995), or Rochester, New York (May 1, 1995).

Baltimore International Culinary College (MD)

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Dr. Mary Micco Associate Professor, Computer Science
Dr. Larry Kroah, Director of Libraries and Media Resources

Johns Hopkins University (MD)

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Dr. Jonathan M. Links, Associate Professor, Environmental Health Sciences
Ms. Elizabeth E. Kirk, Library Instruction Coordinator

King's College (PA)

Dr. Edward J. Schoen, Dean, School of Business
Dr. Donald Stevens, Professor of History/ Department Chairperson
Dr. Terrence F. Mech, Vice President for Information & Instructional Technologies and Director of the Library

Messiah College (PA)

Dr. Bill Strausbaugh, Executive Assistant to the President
Dr. Barry DeRoos, Director of Computer Training
Ms. Beth Mark, Instruction/Public Services Librarian

Monmouth College (NJ)

Dr. Ivan Gepner, Associate Dean for National Science & Information Technology
Dr. John Pfuhl, Associate Professor/Sociology Dept.
Ms. Rachel Gardner, Assistant Librarian

Monroe Community College (NY)

Dr. Jeffrey Bartkovich, Assistant Vice President for Curriculum and Academic Services
Ms. Donna Cox, Associate Professor
Ms. Debbie Emerson, Reference Librarian

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Ms. Jennifer Burr, Assistant Professor and Reference Coordinator
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Dr. John R. Porter, Associate Professor
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